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Design: The fundamental element

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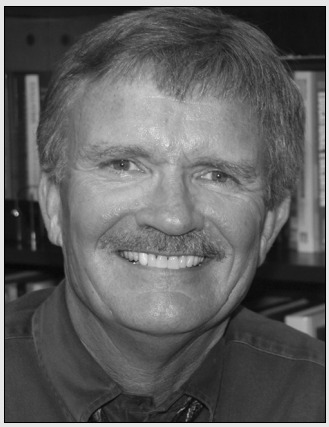
On October 25, 1965, downtown St. Louis stopped in its tracks and thousands watched as the last piece of the mammoth Gateway Arch was being put into place. The weight of the two sides required braces to prevent them from falling against each other. Fire hoses poured water down the sides to keep the stainless steel cool, which kept the metal from expanding as the sun rose higher. Some horizontal adjustments were required, but when the last piece was put into place and the braces released, it fit perfectly, according to plan, and no one was surprised (Liggett, 1998). The thousands of onlookers applauded as the sun reflected off the bright span. The architects and engineers who were also watching smiled and went back to their offices.



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Just like the Arch, distance education requires a careful process that includes systematic design before implementation. Success is almost guaranteed if all the pieces of the plan receive the same attention as the most obvious. The base sections of the Gateway Arch required more engineering savvy and study than any other component. The last and most visible span that connected the two halves received the most attention from the thousands of onlookers, but success was directly related to how the original supports were positioned.

Design is the fundamental element of effective instruction. Many think that the traditional systematic models of instructional design are not relevant to online teaching. Some claim that the traditional models of design such as the Dick, Carey, and Carey's model, and its derivative the ADDIE model, cannot be readily applied to instruction that is delivered to distant

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learners. Some claim that systematic planning is not important or even needed when learner-centered instruction is developed.

In spite of claims, the evidence remains clear that the key to effective instruction is the concept of design, defined by Seels and Richey (1994) as: "the process of specifying conditions for learning. The purpose of design is to create strategies and production at the macro level, such as programs and curricula, and at the micro level, such as lessons and modules" (p. 30).

At the root of most widely practiced and classic design approaches is the concept of systems. The idea of systems used in instruction is derived from Bertalanffy's General Systems Theory (1968), and Banathy's Instructional Systems (1968, 1991), usually called instructional systems design. This process has served as the intellectual technique of those in the field of instructional technology and distance education for decades.

Instructional designers, the engineers of quality instruction similar to the construction engineers and architects who designed the Gateway Arch, are on the front-lines of distance education implementation. Certainly, modern interpretations of the ADDIE model, such as the Unit-Model-Topic approach (Simonson, Smaldino, Albright, & Zvacek, 2012), have been proposed to clarify and simplify the approaches for the systematic design of distance delivered instruction. However, any approach that makes claims about quality but that does not have the systems approach at its foundation should be considered suspect.

And finally, Aeschylus once again provides insight about why an organization should be concerned about quality instruction delivered at a distance: "resolve is not to seem, but to be, the best."

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AT THE ROOT OF MOST WIDELY PRACTICED AND CLASSIC DESIGN APPROACHES IS THE CONCEPT OF SYSTEMS. THE IDEA OF SYSTEMS USED IN INSTRUCTION IS DERIVED FROM BERTALANFFY'S GENERAL SYSTEMS THEORY (1968), AND BANATHY'S INSTRUCTIONAL SYSTEMS (1991; 1968), USUALLY CALLED INSTRUCTIONAL SYSTEMS DESIGN. THIS PROCESS HAS SERVED AS THE INTELLECTUAL TECHNIQUE OF THOSE IN THE FIELD OF INSTRUCTIONAL TECHNOLOGY AND DISTANCE EDUCATION FOR DECADES.